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26304 7590 10/16/2007  
**KATTEN MUCHIN ROSENMAN LLP  
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/500,786	07/02/2004	Ralph C. Longworth	SHI 19.251 (310010-00106)	8458
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TITLE OF INVENTION: PULSE TUBE COOLING BY CIRCULATION OF BUFFER GAS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional	NO	\$1440	\$300	\$0	\$1740	01/16/2008
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EXAMINER	ART UNIT	CLASS-SUBCLASS
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DOERRLER, WILLIAM CHARLES	3744	062-600000
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11/01/2007 INTEFSW 00002482 10500786

01 FC:1501 1440.00 DA  
02 FC:1501 300.00 DA

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- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.  
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- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively,  
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 **Katten Muchin**

2 **Rosenman LLP**

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3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

**SHI-APD Cryogenics, Inc.  
Sumitomo Heavy Industries, Ltd.**

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

**Allentown, PA  
Tokyo, Japan**

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☒ Issue Fee  
☒ Publication Fee (No small entity discount permitted)  
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- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

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Authorized Signature **/ Martha M. Rumore**  
Typed or printed name **Martha M. Rumore**

Date **10/31/2007**

Registration No. **47,046**

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